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ABSTRACT

A study was conducted to assess the effect on reading achievement of changing the length of the kindergarten day. Mean scores of 148 children attending half-day kindergarten were compared to mean scores of 96 children attending all-day kindergarten. Four full-day experimental groups and four half-day control groups were selected, and their socioeconomic levels were matched. The Gates MacGinitie Reading Tests were used to collect data from the experimental and control groups during the same week at the end of the first grade year. Results showed there was no significant difference in reading scores between full-day and half-day kindergarten students. (One figure and two tables of data are included.) (Author/SR)

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The Effect of Length of Time in Kindergarten on Reading Achievement

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Abstract

A study was conducted to assess the effect of changing the length of the kindergarten day on reading achievement. Mean scores of children (N=148) attending half-day kindergarten were compared to mean scores of children (N=96) attending all-day kindergarten. Four full-day experimental groups and four half-day control groups were selected, and their socioeconomic levels were matched. The Gates MacGinitie Reading Tests were used to collect data from the experimental and control groups during the same week at the end of the first grade year. Results showed there was no significant difference in reading scores between full-day kindergarten students and half-day kindergarten students.

Many school corporations are determining whether all-day kindergartens should be implemented in their school systems. One of the goals of these all-day programs would be to increase achievement. In order to be more informed when recommending whether or not to plan and affect a whole-day program for kindergarten, the effects of such a program should be assessed. One way would be to review the research about the reading achievement of half-day and all-day kindergarten students.

Lengthening the kindergarten day is a controversial topic. Viewing the kindergarten in its social and historical settings helps one understand why this is so. While educators of young children appreciate the secure place of the kindergarten in the educational system, many feel that kindergarten has lost its original purpose.

Historically, kindergarten began as a full-day program (Ulrey, Alexander, Bender, and Gillis, 1982). Friedrich Froebel, after twenty-four years as a teacher, established the first kindergarten in 1840 in Blankenburg, Germany. Approximately twenty years after kindergartens were introduced into Germany, they were initiated in the United States by persons who had learned directly from Froebel (Hills, 1985). These programs, of course, maintained Froebel's kindergarten education plan of assuring "...the unfolding and maturing of the child's potential" (Blow, 1894). These kindergartens continued Froebel's theory as

originally established and, by the turn of the century, operated in both cities (Hills, 1985) and rural areas (Oelerich, 1984).

Several developments led to the change to a half-day program for kindergarten. World War II and the shortage of women teachers while men were away caused some of the cut-back to half-day programs (Oelerich, 1984). Larger numbers of children (Ulrey et al., 1982) and the popularity of kindergarten (Hills, 1985) also demanded a reduction in the length of day.

As the length of day was changed, so also was Froebel's plan of education changed to fit the developing American society. Because five-year-olds are viewed as generally more sophisticated than their peers of just thirty years ago, greater demands on kindergarten education have been made (Peskin, 1988).

Because of these demands, kindergarten programs have been pressed to accomplish more. This push has made school boards and committees studying the possible expansion of kindergarten face many financial and educational questions (Rothenberg, 1984). But even if monies are available, is it justifiable academically to extend the day for five-year-olds? Why not just keep half-day programs?

There are some real concerns about all-day kindergarten. Length of day for the more immature child, pressure to concentrate on academic skills, and added

expense for teachers, teacher aides, and transportation are some areas to be considered (Herman, 1984). On the other hand, all-day kindergarten may give children more time to develop and consolidate learning, more individual attention, more teacher observation and assessment, and more time to develop social skills (Hills, 1984; Terens, 1984). All of these could be ways to improve education.

Empirical studies have evaluated the effects of time on kindergarten achievement. Cleminshaw and Guidubaldi (1979) randomly selected ninety-six kindergarten children and compared curriculum and length of day. Half-day, everyday and all-day, alternate day plans were compared, and the effect of time produced significant differences on the academic variables tested. Because of these findings, Cleminshaw and Guidubaldi (1979) suggested "...a useful subject for future research might be the effects of all-day, everyday kindergarten...".

The results of tests from full-day, everyday and half-day, everyday programs in both Nassau County, New York (Terens, 1984), and in the Chicago Public Schools (Chicago Public Schools, 1985) favored the full-day kindergarten. In Nassau County, the increased length of the day allowed for an expanded readiness program, and this combination led to higher overall C.A.T. scores by the full-day students at the end of the kindergarten year (Terens, 1984). In government-funded kindergarten programs in Chicago, the

increased quantity of teacher time produced higher post-test results in full-day classes when pupil/teacher ratio was equal in both full-day and half-day classrooms (Chicago Public Schools, 1985). Preschool experiences and inservice programs were also thought to be partly responsible for the increased test results.

In reports of studies by Hills (1985) and by Stinard (1982), results favored the all-day, everyday kindergarten. In the six studies listed by Hills (1985), higher scores in academic achievement for full-day students were reported. A significant difference in the results for all-day kindergarten students was reported in only one of these studies. Like Hills, Stinard's (1982) comparison of eight studies also positively regarded all-day, everyday kindergarten programs. Stinard found that in no instance did the half-day, everyday students score significantly higher than the full-day, everyday students. In fact, in eighty-five percent of the thirty-three cases studied, the full-day, everyday students "...performed significantly higher in achievement than children in the half-day schedule" (Stinard, 1982).

It seems that research, even with differences in socioeconomic status, curriculum, teaching methods, teacher experience, class size, and/or district size, shows increased achievement for those students in all-day, everyday kindergarten. If this is the case, then school

systems must certainly look closely at this advantage when considering all-day, everyday programs for their kindergartens.

Statement of the Problem

In order to make informed decisions about increased length of day for kindergarten students, its relationship to academic achievement must be considered. One area of achievement would certainly be reading. Does increased time spent in kindergarten raise reading scores?

A good measure of the sustained effectiveness of a program would be to test and compare at the end of the first grade those groups that had attended half-day kindergarten programs and full-day kindergarten programs. Do students enrolled in half-day kindergarten or all-day kindergarten do better on a standardized test in reading at the end of first grade?

The purpose of this study was to test the hypothesis that there is a significantly greater mean post test score in reading at the end of first grade for students who attended all-day kindergarten when compared to the mean post test score in reading at the end of first grade for those students who attended half-day kindergarten.

Method

In the fall of 1978, the Evansville-Vanderburgh School Corporation chose four schools in which to implement full-day, everyday kindergarten programs. These schools represented a wide socioeconomic range. A random sampling of half-day, everyday students was selected for a control group from four schools that matched the socioeconomic backgrounds of those full-day students in the experimental group. One hundred eighty-seven children were enrolled in the full-day program, and two hundred twenty-three children were enrolled in the half-day program.

At the end of first grade, data from the half-day and full-day kindergarten groups were collected. Half-day students from both morning and afternoon sessions were included in the post-test results at the end of first grade. Only data from those children who attended both kindergarten and first grade in the same elementary school were used for the study. At the end of the first grade, the mean scores of one hundred forty-eight half-day students and ninety-six full-day students were compared, and any differences in reading achievement level were determined.

The Gates-MacGinitie Reading Tests, Primary A, were used to collect data. The test consisted of two parts. The Comprehension Test indicated the level at which a student could read and understand paragraphs and sentences. The

Vocabulary Test determined the level at which a child could recognize and analyze individual words.

All students completing the first grade in the Evansville-Vanderburgh School Corporation were given the Gates-MacGinitie Reading Tests. They were given in April, 1980, during the same week to all first graders.

The data from the control and experimental groups were analyzed by computer. The mean scores of the two groups were compared using a one-tailed t test. The t test determined if the results were significantly different.

The research design was a quasi-experimental, post-test only nonequivalent control group design.

Results

TABLE I

1980 Gates-MacGinitie Results for 1978-1979
Full-Day and Half-Day Kindergarten Students

	Full-Day N=96		Half-Day N=148	
	Mean	Standard Deviation	Mean	Standard Deviation
Comprehension	25.57	2.98	23.00	4.75
Vocabulary	36.43	8.23	28.04	9.86
Total	62.00	9.77	51.04	13.81

From Table I, it can be seen that the comprehension mean score for ninety-six full-day students was 25.57 with a standard deviation of 2.98. The comprehension mean score for one hundred forty-eight half-day students was 23.00 with a standard deviation of 4.75. The vocabulary mean score for the full-day students was 36.43 with a standard deviation of 8.23. The vocabulary mean score for the half-day students was 28.04 with a standard deviation of 9.86. The total mean score for full-day students was 62.00 with a standard deviation of 9.77. The total mean score for half-day students was 51.04 with a standard deviation of 13.81.

Using Figure I to compare mean scores for comprehension, vocabulary, and the total for full-day and half-day students, the full-day students' scores were higher at the end of first grade.

FIGURE I

Means of Full-Day and Half-Day Students

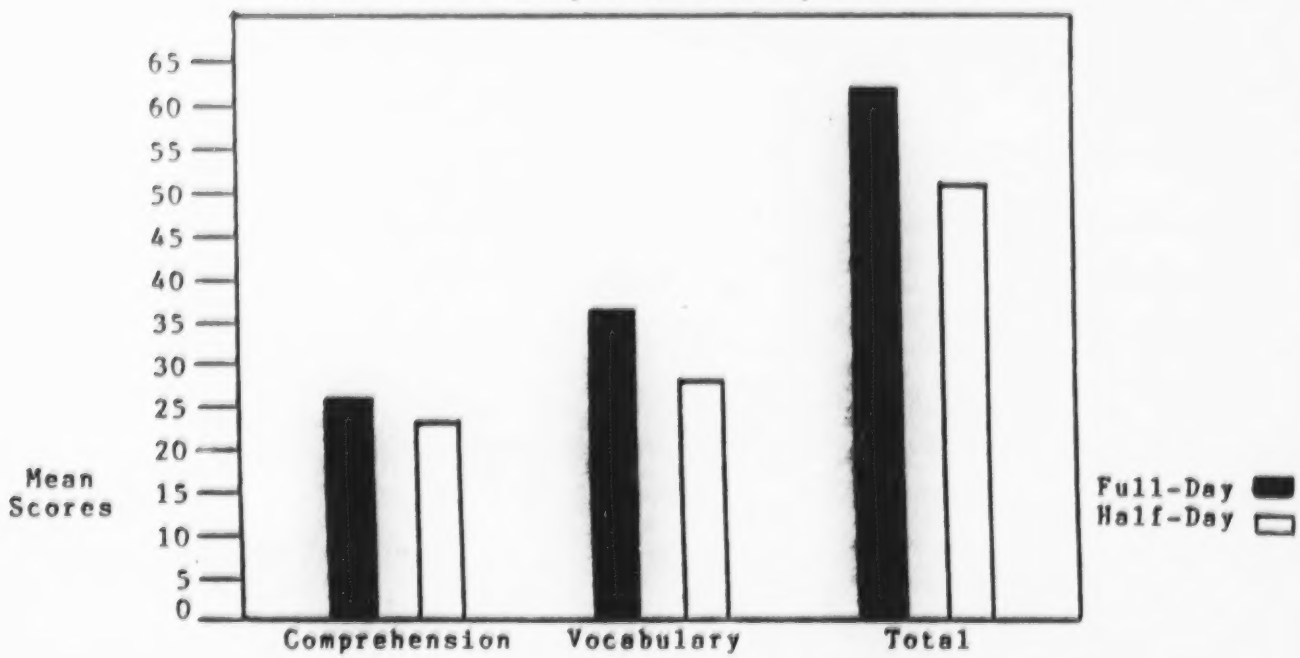

TABLE II

Statistical Tests
for 1978-1979 Full-Day
and Half-Day Kindergarten Students

	t value	Significant Differences
Comprehension	-0.92	0.20
Vocabulary	-1.31	0.12
Total	-1.30	0.12

Table II showed a t value of -0.92 and a one-tailed probability of 0.20 in comprehension. Table II showed a t value of -1.31 and a one-tailed probability of 0.12 in vocabulary. Table II showed a t value of -1.30 and a one-tailed probability of 0.12. There was no significant difference at the .05 level in comprehension, vocabulary, or total scores.

Discussion, Conclusions, and Recommendations

The results showed that the directional hypothesis must be rejected. There was no statistically significant difference in reading scores between full-day kindergarten students and half-day kindergarten students.

It should be noted when discussing the results that the pupil/teacher ratio in full-day programs was 46.75 to 1. The ratio in the half-day classes was 55.75 to 1. There was no mention of teachers' aides. Perhaps the lower scores in all areas by half-day students could, in part, be attributed to the larger average number of students in the half-day classes.

Most of the literature reviewed revealed significant differences in scores in favor of full-day kindergarten programs. When reviewing the results of these and other studies, one must be certain to carefully assess variables such as curriculum, teacher methods, sampling methods, pupil/teacher ratio, and teacher inservice, and how they affect the results.

Because no pre-test was given when selecting groups, internal validity could be questioned, but one must assume that the schools chosen for both the experimental and control groups were representative of the larger population of kindergarten students in the Evansville-Vanderburgh School Corporation. If this is the case, and there is no significant difference in reading scores of full-day students and half-day students, one might study further other effects of the full-day kindergarten. Attitude toward school, social adjustment, and range of experiences are a few factors to consider when determining whether all-day kindergartens should be implemented in a school system.

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